

## Analysing the Network of an ISIS Twitter Account

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It is well documented that the Islamic State of Iraq and al-Sham (ISIS) has an active and well-developed media presence, especially on social networks. Recently, Robert Hannigan, director of the Government Communications Headquarters (GCHQ), wrote in the Financial Times that social networks have become the "["command-and-control networks of choice for terrorists and criminals"](#)".

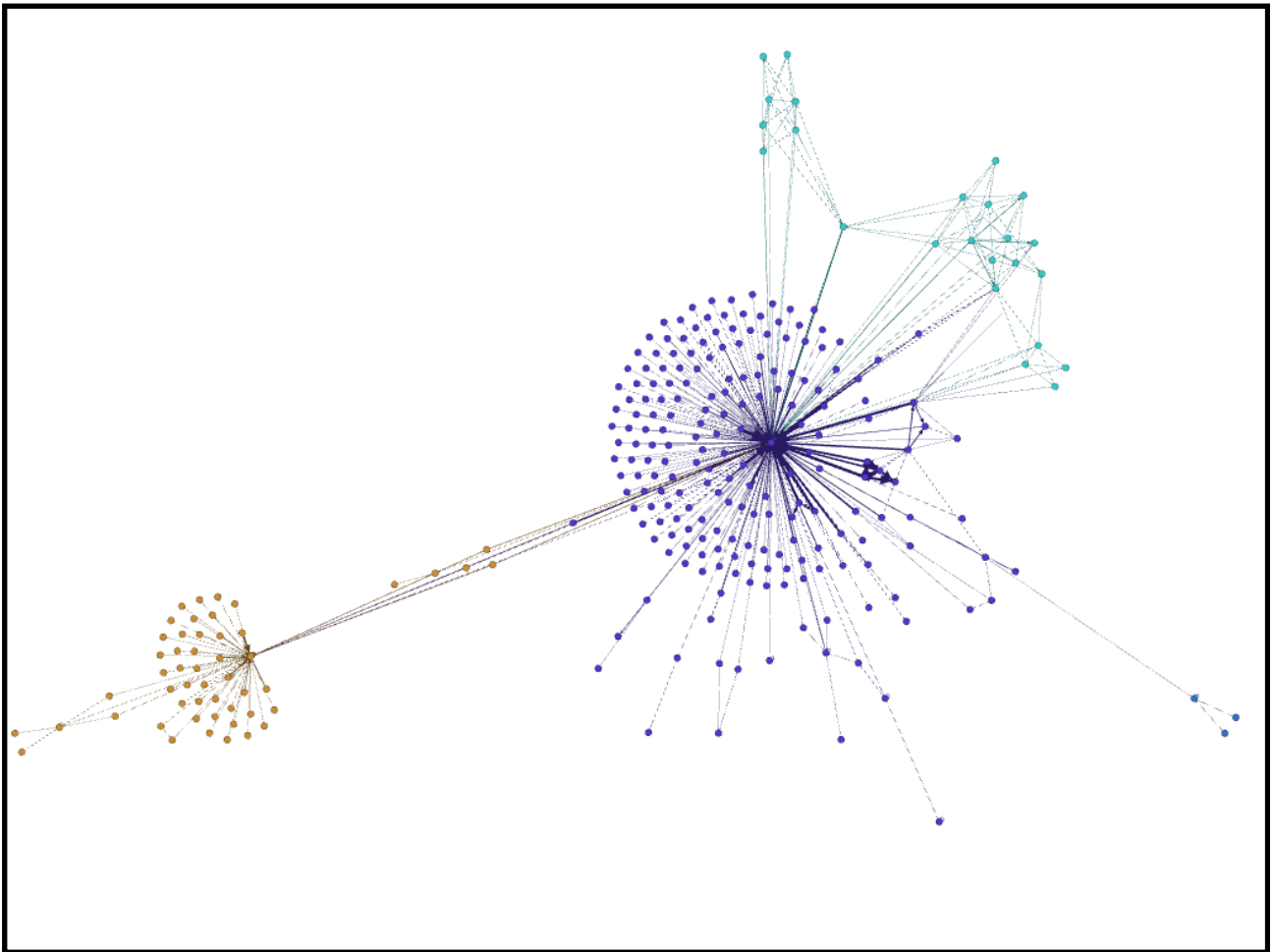
We tested the conclusion reached in other studies that far from being a tightly controlled mouthpiece for ISIS propaganda, Twitter's structure has resulted in a fragmented network of fighters, sympathisers and disseminators competing for attention. We used open-source tools and techniques to visualise and analyse an ISIS Twitter network centred around a search of mentions and replies for one particular account, [@ISTimes2](#), on the 11th November 2014.\*

[NodeXL](#) was used to scrape and structure the information from Twitter with the resulting file exported into [Gephi](#), an open-source network visualisation platform. This research worked within certain constraints. Notably, Twitter imposes "rate limiting" when accessing its application programming interface (API) and so a Twitter network based on 1,000 mentions and replies (but excluding follows) was extracted to minimise its impact.

Screenshot 1 shows the extracted network with distinct communities forming in clusters around important nodes. Force Atlas was selected as the layout with average path length and betweenness centrality used to refine the network. Communities were identified using the modularity function which resulted in a network comprised of three main communities.

The community coloured purple is formed around the [@ISTimes2](#) account with the network of users forming a spiral around this central node. The orange community is

centred on another important ISIS account, [@ISL103](#). Notably, it has relatively few links to the ISTimes2 network with just six accounts visibly acting as a bridge between the two communities. Finally, the third community, coloured blue, is more diffuse with a multiple important nodes around which the network has formed. These critical nodes include influential and emerging ISIS disseminators such as [@ShamiWitness](#), [@NusantarWitness](#) and [@ShamBreaking3](#).

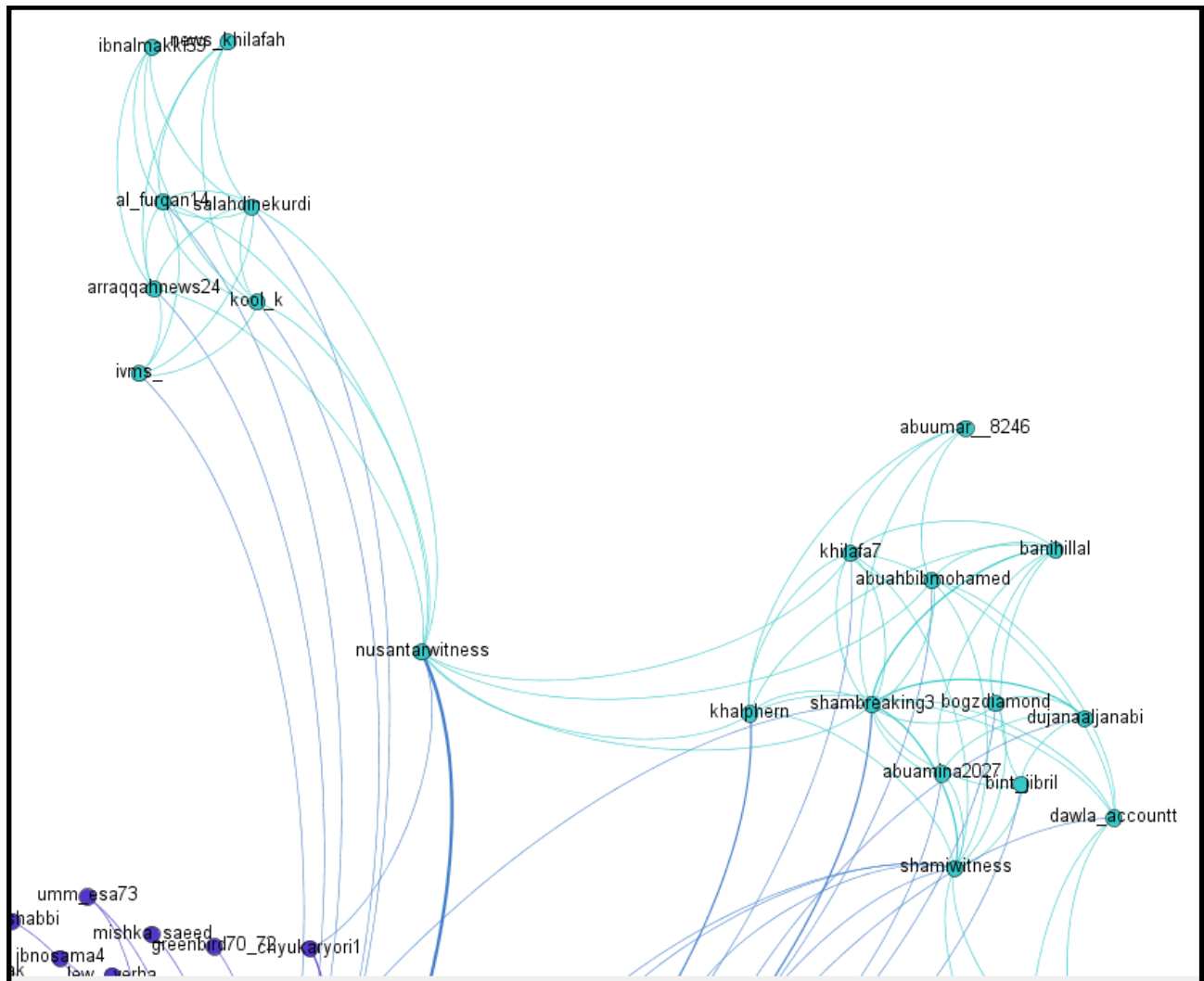


Screenshot 1: The complete network with three clearly identified communities

Screenshot 2 shows the community centred on the [@ISTimes2](#) account with the community of users spiralling around this node. The majority of these users are ISIS supporters but this community also includes a number of journalists and opponents of ISIS engaging with other users.



Screenshot 4 shows the third identified community. Unlike the other two it is more diffuse and based around multiple influential disseminators of ISIS propaganda and messages. These accounts have multiple links to the members of the @ISTimes2 community reflecting greater interaction through Twitter mentions and replies.



Screenshot 4: The diffuse third community centred on important ISIS disseminators

All three communities were composed of very similar members often including a mixture of ISIS fighters (and those claiming to be fighters), sympathisers and disseminators. The majority of the accounts identified in this network analysis were therefore broadly supportive of the message and actions of ISIS. However, a minority of nodes were Twitter users opposed to the group and their ideology. For example [@ShameSheep](#), a user who engages with ISIS supporters and attacks their beliefs and claims.

This network visualisation of the communities interacting with @ISTimes2, confirms findings from prior studies. It demonstrates that ISIS lacks formal centralised control over the communications activities of its fighters and supporters. Instead it exerts indirect control through spreading propaganda messages, often in video or image form that are then shared by its supporters and disseminators to a wider audience. Therefore, although Robert Hannigan is right to identify social networks as crucial elements in the command and control structure of ISIS; the group's leadership lack the ability to directly control the communication of their ideology.

This analysis also shows that the ability of ISIS to communicate beyond its narrow audience of supporters is fundamentally reliant on disseminators such as @ShamiWitness. As our colleagues at the International Centre for the Study of Radicalisation and Political Violence (ICSR) noted in #Greenbirds a significant proportion of foreign fighters consume information regarding the conflicts in Iraq and Syria from disseminators rather than exclusively through official ISIS channels.

Finally, the ever-shifting landscape of ISIS twitter accounts presents a number of challenges to analysing their networks of communication. Twitter routinely suspends and deletes the accounts of ISIS users for breaching the terms and conditions of the site while ISIS fighters and sympathisers delete their accounts in periodic bouts of paranoia and suspicion. Network analysis can therefore only provide a static glimpse of how these users communicate between themselves and to the outside world. Nevertheless, it provides valuable insights into the diffuse nature of ISIS's Twitter presence and the importance of disseminating nodes around which communities form.

\*Note: many of the Twitter accounts referred to in this piece post graphic text, images and videos.